

"*Amnicola egena*" of Gould being a spineless *Potamopyrgus* from New Zealand.

Descriptions of New Species.

Paludestrina imitator, n. sp.

Shell narrowly perforate or nearly closed, narrowly ovate, thin, light corneous, subtranslucent, nearly smooth, not glossy; whorls $4\frac{1}{2}$, the first planorboid, causing the apex to be decidedly obtuse, the rest quite convex, separated by a deep suture. Spire slender, conic. Aperture somewhat less than half the shell's length, ovate, angular posteriorly, the parietal margin somewhat flattened; peristome thin, the inner margin adnate to the preceding whorl for a short distance above. Alt. 3. diam. 1.6, greatest axis of aperture 1.28 mm.

Counties near San Francisco Bay, California. Types from Santa Cruz.

This species, though corneous and subtranslucent, resembles a young *Bythinella nickliniana* in form. It is evidently a common shell in the region mentioned above. In a lot from Oakland the shells are larger length $4\frac{1}{2}$ mm, with five whorls. This is analogous to the *attenuata* form of *nickliniana*, in the East. The same large form is before me from Petaluma Creek, Sonoma county (J. B. Davy) and Santa Cruz in brackish water (W. J. Raymond); and I have seen similar but deeply eroded specimens, the earlier whorls wholly removed, from San Pedro. It may be that the types and other specimens before me of small size, perhaps some 200 shells in all, are only half grown, and all would attain a length of 4 to 5 mm. when adult. It is conspicuously unlike "*Bythinella intermedia*" Tryon and *Pomatiopsis binneyi* Tryon, and is less attenuated than the smooth "*semani*" form of "*Tryonia*" *protea*. *P. stearnsiana* is not attenuated above, but stout spired, more on the style of *P. longinqua* Gld. (*intermedia* Tryon), while in *imitator* the spire is slender above, though the apex itself is quite obtuse.

P. stearnsiana, n. sp.

Shell narrowly perforate, ovate, thin, corneous, nearly smooth, somewhat glossy, whorls nearly $4\frac{1}{2}$, convex, separated by rather deep sutures, the spire with convexly conic lateral outlines, stout. Apex rather obtuse. Aperture half the shell's length or somewhat less, ovate, the posterior angle blunt and rounded, peristome continuous, the inner margin well defined, generally quite free at the edge from the adjacent whorl. Alt. 2.6, diam 1.7, or larger up to 3.2 mm. alt.

Near Oakland (type locality); Marshall's, Marin Co.; Tuolumme Co. (Hemphill). San Francisco Peninsula? (G. W. Dunn.)

Differs from *P. imitator* in the decidedly convex outlines of the upper part of the spire, making it stouter, the rounded posterior angle of the mouth, free inner lip, etc. In some specimens which I refer to this species as a variety or form, the aperture and peristome are less typical, but the shape of the spire readily distinguishes them from *P. imitator*. Localities for this variety, if such it is, are Lyndon Gulch, near Los Gatos, and a tributary of the same, Santa Clara Co., Strawberry Creek, Berkeley, Contra Costa Co., and Conly Gulch, Santa Cruz Co., all collected by Mr. W. J. Raymond.

Named in honor of a West Coast friend. I wish for his sake it was a foot long instead of two or three millimeters.

***Fluminicola columbiana* Hemphill, n. sp.**

Shell subglobose, with very short, conic spire, and imperforate of nearly imperforate axis. Moderately solid, of a dark olive or brown color, glossy, with fine growth-striae. Whorls 4, separated by deep sutures, the last whorl with a narrow ledge or shoulder below the suture, then flattened and sloping, the periphery decidedly below the middle of the whorl, broadly rounded; base convex. Aperture large, irregularly piriform, being narrow and angular above, bluish inside; outer lip quite thin and sharp; columella broadly concave, heavily white calloused; parietal wall almost free from callous, dark. Alt. 7.5, diam. 6.8, longest axis of aperture 5.2 mm.

Columbia River, Washington, near Wallula and near mouth of Snake R.; Snake River, near Weiser, Idaho (H. Hemphill).

The dark color, superior constriction and narrow but prominent shoulder of the last whorl, acuminate narrowed posterior portion of the aperture, and absence of callous on the inner lip, posteriorly, are characters easily distinguishing this species from its congeners. It has been known for some years under Mr. Hemphill's MS. name of "*F. nuttalliana* var. *columbiana*," but it seems to be one of the most distinct species of the genus.

***Fluminicola erythropoma*, n. sp.**

Shell small, globose-turbinata with short spire, perforate, thin but moderately solid, silvery corneous in color, black where the soft parts are retained, not glossy, nearly smooth. Whorls $3\frac{1}{2}$, separated by impressed sutures, the last half more rapidly descending; last whorl well rounded throughout. Aperture oblique, broadly ovate, angular above; outer lip thin, inner lip concave below, slightly expanded,

moderately calloused; adnate portion above very short, somewhat calloused. Operculum light red, composed of about 3 slowly increasing whorls, the nucleus sunken. Alt. 2.7, diam. 2.3, longest axis of aperture 1.5 mm.

Ash Meadows, Nye Co., Nevada.

Like *F. fusca* in color, and at first referred to that species as a stunted local form by Dr. R. E. C. Stearns and myself (see N. A. Fauna No. 7, 1893, p. 282); but on renewed examination it was noticed that the operculum is very different from that of other known members of the genus, in having the latter part of the last whorl far narrower, the spiral portion consequently larger, and the nucleus nearer the middle. It differs from *F. merriami* Pils. in the calloused inner lip, among other features; and the different operculum and pale translucent tint of the shell readily separate it from "*Amnicola*" *turbiniformis*, "*Amnicola*" *dalli*, and other small varieties of *Fluminicola seminalis* Hinds. The red color of the operculum seems to be constant, and the size varies but little in the large series collected.

Pomatiopsis californica, n. sp.

Shell turrited-conic, umbilicate, rather thin, chestnut-brown. Surface somewhat shining, with slight, irregular growth wrinkles and more conspicuous wrinkles or incipient epidermal lamellæ at unequal intervals, especially on the upper portion. Spire conic, the apex slightly obtuse, glossy, generally eroded in adult shells. Whorls $2\frac{1}{2}$, extremely convex, separated by deep sutures, the last whorl short and convex. Aperture vertical, ovate, scarcely angular above; peristome continuous, the inner margin less convex than the outer, nearly straight where it is in contact with the preceding whorl for a short distance posteriorly; edge simple, the columellar margin a trifle expanded above the umbilicus. Alt. 5, diam. 3.3, longer axis of aperture 2.14 mm.

San Francisco, California (R. E. C. Stearns); Oakland (Beecher coll.)

Two lots of this species are before me from "San Francisco," one received from Dr. R. E. C. Stearns, the collector of the other unknown. Another lot (Beecher collection) is from Oakland, collector also unknown. All were labelled "*P. intermedia* Tryon."

P. californica resembles the Eastern *P. lapidaria* and *P. hinkleyi* in color, texture and general appearance. It differs from *P. lapidaria* in being conspicuously wider, less turrited, more *Amnicola*-shaped. From *P. hinkleyi*, described from Alabama (NAUTILUS X, 37, Aug.